

WHAT IS CLAIMED IS:

Sub
Bl

1. ~~A system for computing equation coefficients to~~
represent an input-output color characteristic of a color
display device, said system comprising:

a signal generator for generating an output
signal that can be used by a color display device to
produce a predetermined pattern on a screen of said color
display device;

a general purpose computer providing a
plurality of first outputs to said signal generator such
that said signal generator incrementally changes said
output signal from a first extreme to a second extreme
such that a first color can be displayed on said color
display device in said predetermined pattern, said single
color being displayed incrementally from a first
brightness level to a second brightness level;

a photometer device positioned to measure the
incremental brightness levels that can be displayed on
said color display device, said photometer providing a

19 ~~brightness data for each incremental brightness level to~~
20 ~~said general purpose computer;~~
21 ~~said general purpose computer correlates said~~
22 ~~first outputs with said brightness data to further~~
23 ~~calculate a plurality of coefficients that represent the~~
24 ~~signal input-to-first color output relationship of said~~
25 ~~color display device.~~

66229-082550
Sub Ed
1 2. The system for computing of claim 1, wherein
2 said general purpose computer further can provide said
3 plurality of coefficients to said color display device.

1 3. The system for computing of claim 1, wherein
2 said coefficients are for a polynomial equation that
3 represents the signal input-to-first color output
4 relationship of said color display device.

1 4. The system for computing of claim 1, wherein
2 said plurality of coefficients can be communicated to

1 5. The system for computing of claim 1, wherein
2 said plurality of coefficients can be utilized in a third
3 order polynomial equation which predicts the brightness
4 of said first color to within 0.3 foot-lamberts for each
5 input signal for said color display device.

1 7. The system for computing of claim 1 wherein
2 said color display device can be at least one of a VGA
3 monitor, a MultiSync monitor, a flat panel NCD display,
4 a flat panel SPU display, a flat panel LCD display, a
5 reflective LCD display, and a FED display device.

Sub
B2

09362080-072799

1 8. ~~A method of calculating a mathematical~~
2 representation of the signal input-to-color brightness
3 output relationship of a color display monitor, said
4 method comprising the steps of:
5 providing input signals having predetermined
6 incremental changes between said input signals to a color
7 display device such that said color display device
8 produces a predetermined pattern on the color display
9 device's screen;
10 measuring a brightness of at least a portion
11 of said predetermined pattern at each incremental change
12 of said input signal and providing said measured
13 brightness as brightness data to a general purpose
14 computer;
15 correlating said input signals with said
16 brightness data in said general purpose computer;
17 calculating coefficients of a polynomial
18 representation, in said general purpose computer, of said
19 ~~correlated input signals to said brightness data;~~

20 ~~storing said coefficients in a memory device~~
21 ~~associated with said color display device.~~

Sub E4
1 9. The method of claim 8, wherein said input
2 signals represent at least one predetermined color that
3 can be displayed on said color display device.

1 10. The method of claim 8, wherein prior to the
2 step of providing a step of warming up said color display
3 device is performed.

1 11. The method of claim 8, wherein said memory
2 device associated with said color display device is a DDC
3 memory.

Sub B3
1 12. ~~A color display device adapted to provide a~~
2 ~~plurality of coefficients to a color display device~~
3 ~~driver circuit, said coefficients being related to a~~
4 ~~signal-input-to-brightness-output transfer function of~~

5 ~~said color display device, said color display device~~
6 ~~comprising:~~
7 ~~input/output circuitry for connecting said~~
8 ~~color display device to a general purpose computer;~~
9 ~~a display screen in communication with said~~
10 ~~input/output circuitry;~~
11 ~~a data storage device, in communication with~~
12 ~~said input/output circuitry, for storing, at least, a~~
13 ~~plurality of coefficients for a signal-input-to-~~
14 ~~brightness-output transfer function, said plurality of~~
15 ~~coefficients being calculated after incremental signals~~
16 ~~are provided to said color display monitor, via said~~
17 ~~input/output circuit, such that a predetermined pattern~~
18 ~~is displayed on said display screen, a brightness data of~~
19 ~~said predetermined pattern is measured and correlated~~
20 ~~with each said incremental signal, a transfer function,~~
21 ~~having coefficients, is calculated based on said~~
22 ~~correlation of said incremental signals and said~~
23 ~~brightness data, said coefficients then being stored in~~

24 ~~said memory device, said coefficients being available to~~
25 ~~a color display device driver circuit when said color~~
26 ~~display device is connected to a general purpose~~
27 ~~computer.~~

Sub E6
1 13. The color display device of claim 12, wherein
2 said transfer function is a polynomial equation.

1 14. The color display device of claim 12, wherein
2 said transfer function is a third order polynomial
3 equation.

1 15. The color display device of claim 12, wherein
2 said color display device is a screen utilized by at
3 least one of a personal computer, laptop computer, and
4 computer monitor.

Sub B4
1 16. ~~A computer system comprising:~~

2 ~~a general purpose computer, said general~~
3 purpose computer comprising a color display device
4 driver;

5 a color display device connected to said
6 general purpose computer, said color display device
7 comprising a data storage device containing data that can
8 be provided to said color display device driver in order
9 ~~to aide the standardization of a color brightness.~~

17. The computer system of claim 16, wherein said
2 data comprises coefficients to a polynomial transfer
3 function that describes a relationship between an input
4 signal to said color display device and a color
5 brightness on a screen of said color display device.

18. The computer system of claim 16, wherein said
2 data storage device is memory device.

66220-0802560

Sub
18

Add
Al

Add
Fl

33